

ILLEGIB

Approved For Release 2001/03/30 : CIA-RDP78T05439A000400370036-2

Approved For Release 2001/03/30 : CIA-RDP78T05439A000400370036-2

30097-5

HANDLE VIA  
TALENT-KEYHOLE  
CONTROL SYSTEM ONLY

~~TOP SECRET RUFF~~

TCS #2147/65  
PID/ABCB 52/65  
4 March 1965  
Copy # 9

25X1A

MEMORANDUM FOR: Chief, Nuclear Energy Division, OSI  
ATTENTION: [REDACTED] SNMB/NED  
THROUGH: Chief, Requirements Branch, Reconnaissance Group, CGS  
FROM: Chief, Photographic Intelligence Division, CIA  
SUBJECT: Measurement of Ice-Free Areas at the Krasnoyarsk  
TETS and the Dodonovo Atomic Energy Complex, USSR  
REFERENCES: Requirement No. C-SI5-82,167  
CIA Project No. 30097-5

1. Measurements of ice-free areas on the Yenisey River resulting from water discharge points at the Dodonovo AE Complex and the Krasnoyarsk TETS were made as requested in the referenced requirement. Winter coverage from KEYHOLE [REDACTED] was utilized. 25X1D

2. The ice-free areas were measured from the point of discharge into the Yenisey River at Krasnoyarsk to the farthest point downstream beyond Dodonovo where the ice-free channel was still evident. On [REDACTED] the total distance to the end of the ice lead was approximately 58.4 nautical miles. The end-point on [REDACTED] was cloud covered, but clearing to the north shows it did not extend as far as on [REDACTED]. Intervening frozen areas were also measured where it appeared the channel had previously been ice-free but had refrozen. Melting was evident upstream as well as downstream from the Dodonovo Underground Area discharge points. The enclosed 1:200,000 scale map represents the ice-free and frozen areas graphically. Four 5X enlargements of the coverage from [REDACTED] are annotated to denote the separation of areas for tabulation. The areas with intervening refrozen areas have been referred to as transition zones. The approximate measurements as obtained are as follows: 25X1D

25X1D [REDACTED]  
Downstream from Krasnoyarsk TETS  
Upstream transition zone

Acres	
Ice-Free	Frozen
147	132
106	57

Declass Review by NIMA/DOD

5-16-38

TOP SECRET CONF

TCS #2147/65  
Page 2

Upstream from Dodonovo AE Complex	1703	None
Downstream from Dodonovo AE Complex	2190*	None
Downstream transition zone	38	286*
Total Acreage	4184	475

\*Including a small estimated ice-free area under the cloud cover  
(see Map)

25X1D		Acres	
		Ice-Free	Frozen
	Downstream from Krasnoyarsk TETS	218	96
	Upstream transition zone	76	57
	Upstream from Dodonovo AE Complex	1692	None
	Downstream from Dodonovo AE Complex	2487	None
	Downstream transition zone	584	602
	Total Acreage	5057	755

25X1D 3. [REDACTED] the tabulation shows a greater ice-free area downstream from Krasnoyarsk, a slightly lesser ice-free area upstream and a substantially greater ice-free area downstream from Dodonovo. The greatest change evident, besides the longer lead, was the area immediately downstream from the retention basin discharge point. This ice-free area is shown on the large 20 by 24 inch photo enlargements. Note the greater width of the channel, particularly at the bend in the river. Otherwise the channel remained fairly constant in the melted areas on both coverages. One additional difference, however, was the floating ice on [REDACTED]. On both missions, the overall width of the ice-free channel increased downstream from the reactor effluents. Both discharge points can be seen as ice-free indentations on the small 20X enlargement of Mission [REDACTED]. Only the effect of Discharge Point B is discernible on [REDACTED].

25X1D 4. Three stacks were emitting smoke at Krasnoyarsk TETS on [REDACTED]. The number of stacks emitting smoke on Mission [REDACTED] is not distinguishable because of wind direction. Vapor is rising from the northernmost retention basin at the Dodonovo Northern Operational Area on [REDACTED]. The other basin is not in use.

25X1D

S-16438

HANDLE VIA  
1 TALENT-KEYHOLE  
CONTROL SYSTEM ONLY

TOP SECRET

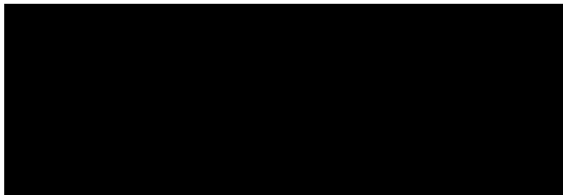
TCS #2147/65  
Page 3

5. All computations were made from measurements with a planimeter by the CIA/PID Project Analyst and should be considered as approximate because of changing scale and distortion. Scale control was obtained from map points. These measurements should not be construed as being data compiled by the NPIC Technical Intelligence Division.

6. The photo analyst on this project was Mr. [REDACTED] 25X1A  
who may be contacted on extension 2317 should you have further questions.

7. This memorandum with enclosures is sent in partial response to the referenced requirement. NPIC/TID measurements which will be forwarded at a later date will complete the project.

25X1A



Enclosures:

CIA/PID/ABCB/P-129/65 (Annotated Map)  
CIA/PID/ABCB/P-130/65 thru CIA/PID/ABCB/P-137/65  
(Annotated Photo Enlargements)  
Total of 9 Enclosures

8

5-16438

ILLEGIB

Approved For Release 2001/03/30 : CIA-RDP78T05439A000400370036-2

Approved For Release 2001/03/30 : CIA-RDP78T05439A000400370036-2



25X1D-5



S-16-38

TOP SECRET RUSS

25X1D

KRASNOYARSK/DODONOV WATER DISCHARGE STUDY

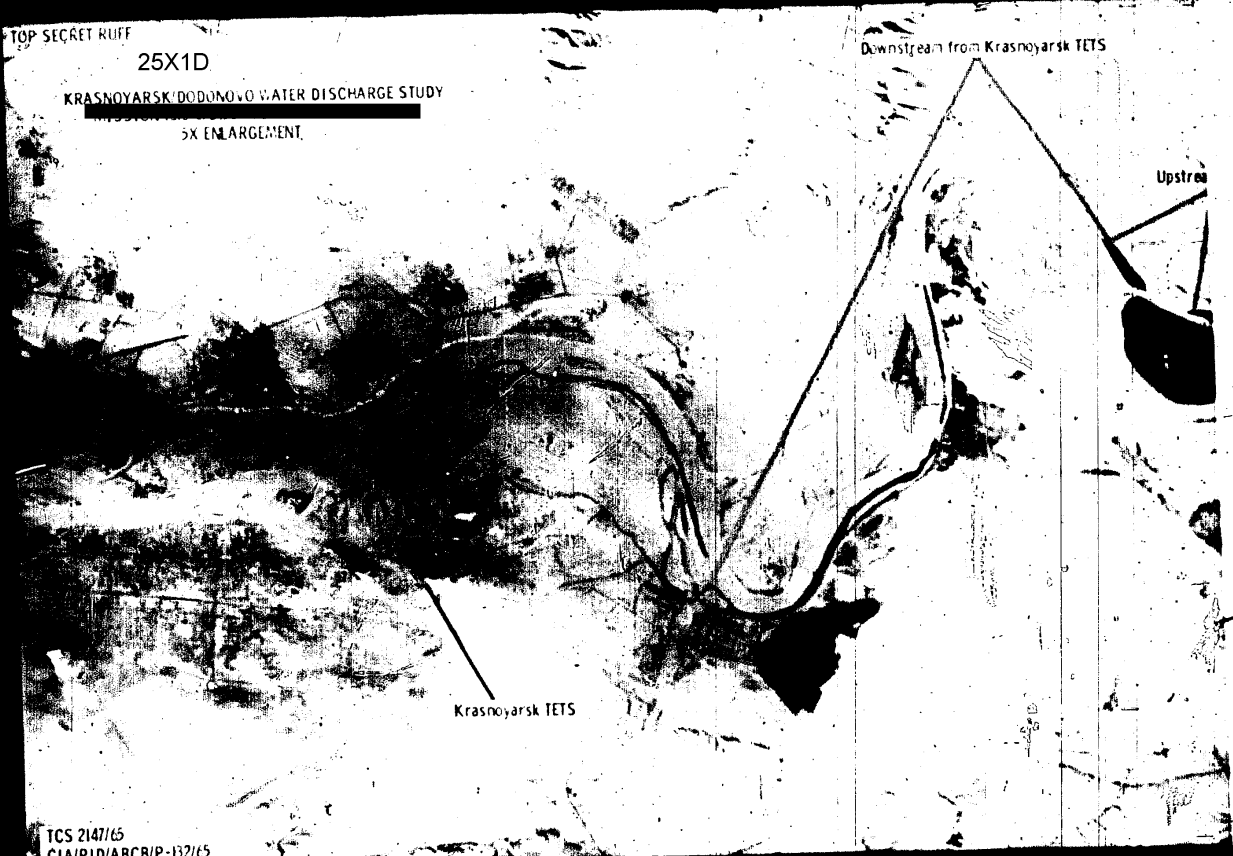
5X ENLARGEMENT

Downstream from Krasnoyarsk TETS

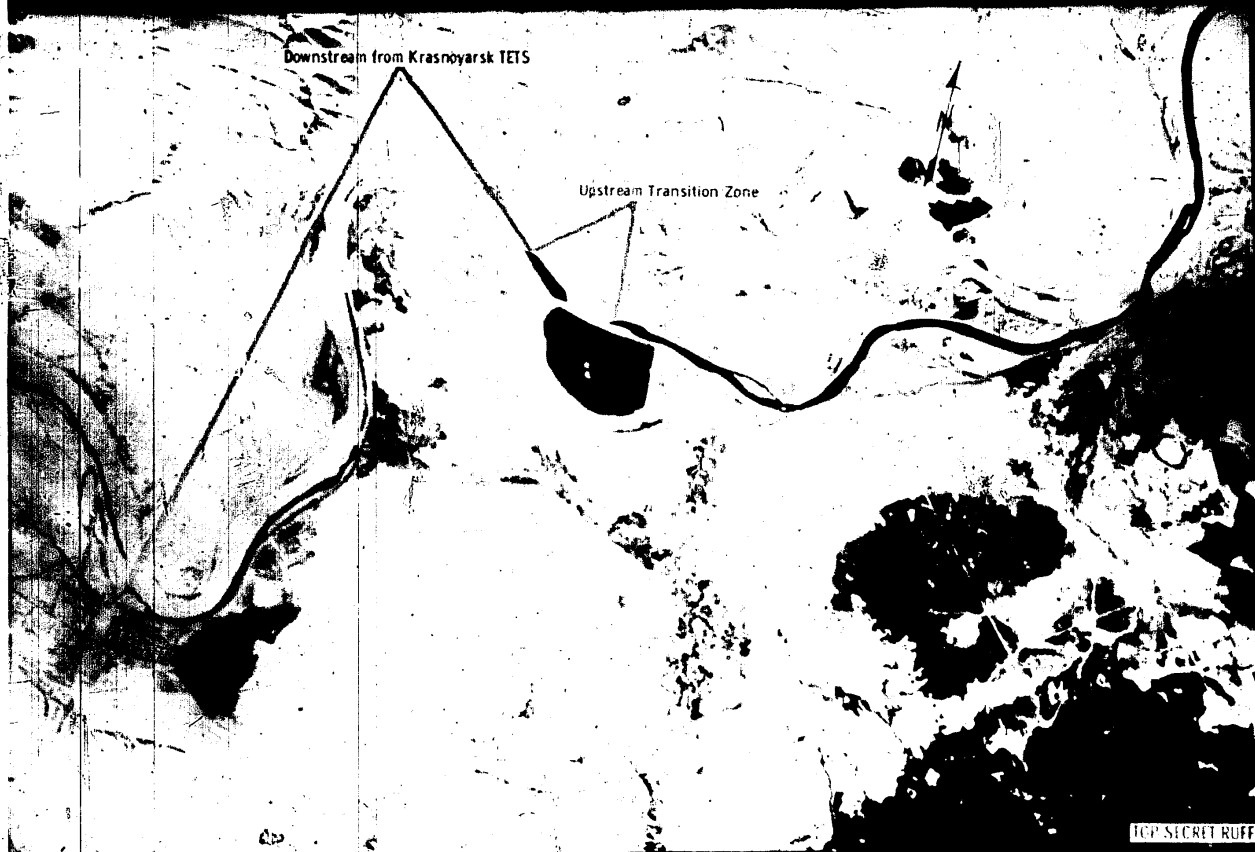
Upstream

Krasnoyarsk TETS

TCS 2147/65  
CIA/PID/ABCB/P-132/65







S-16838

8E#71-S

TOP SECRET RUFF

25X1D

KRASNOYARSK/DODONOV V.ATER DISCHARGE STUDY

5X ENLARGEMENT



TCS 2147/65  
CIA/PID/ABC/P-133/65



SECRET

5-16-54

TOP SECRET RUFF

25X1D  
KRASNOYARSK/BODONOVO WATER DISCHARGE STUDY

5X ENLARGMENT

Downstream Transi

TCS 2147/65  
CIA/PID/ABCB/PID/65

TOP SECRET RUFF

SECRET

25X1D

TOP SECRET RUFF

KRASNOYARSK/DODONOV WATER DISCHARGE STUDY

5X ENLARGEMENT

TCS 2147/65  
CIA/PID/ABCB/P-03/65

TOP SECRET RUFF





42

TOP SECRET RUFF



Downstream Transition Zone

TOP SECRET RUFF

SECRET



TOP SECRET RUFF

KRASNOYARSK/DOBONOVO WATER DISCHARGE STUDY

25X1D 5X ENLARGEMENT

TOP SECRET RUFF

35421-S

S-11-1-1-1

TOP SECRET RUFF

DISCHARGE POINT





DECREASED WIDTH

KRASNOYARSK/DODONOV WATER DISCHARGE STUDY

20X ENLARGEMENT

ICS 214765  
CIA/PID/ABCP-13665

TOP SECRET RUSS

25X1D